

Claims

1. Process for the preparation of an aqueous solution of carboxymethylcellulose containing from 20 to 40 wt% of carboxymethylcellulose, having Brookfield viscosity at 20 °C and 20 rpm from 2000 and 5000 mPa*s, characterised by the fact that it comprises the following steps:
 - a. from 20 to 30 pbw (parts by weight) of carboxymethylcellulose whose aqueous solutions at 4 wt% have Brookfield viscosity from 20 to 1000 mPa*s, at 20°C and 20 rpm are dispersed in 100 pbw of a mixture of water and alcohol containing from 30 to 60 wt% of alcohol;
 - b. the obtained dispersion is heated at a temperature of 35-55 °C, 0.5 to 10 pbw (each 100 pbw of carboxymethylcellulose) of a cellulase preparation are added, and the mixture is stirred at this temperature for 60-200 minutes;
 - c. the alcohol is removed by distillation;
 - d. the cellulase preparation is deactivated by alkalinising and heating at 60-70°C for 20-120 minutes;
 - e. after cooling at 40-55 °C, from 1 to 5 pbw (each 100 pbw of carboxymethylcellulose) of a 30-35 wt% aqueous solution of hydrogen peroxide are added, the mixture is stirred at 55-70°C for 15-45 minutes, optionally adjusting the carboxymethylcellulose concentration by adding water.
2. Process for the preparation of an aqueous solution of carboxymethylcellulose according to claim 1., wherein the alcohol is ethanol or isopropanol.
3. Process for the preparation of an aqueous solution of carboxymethylcellulose according to claim 2., wherein the carboxymethylcellulose which is dispersed in step a. has a degree of substitution comprised between 0.5 and 1.0.
4. Process for the preparation of an aqueous solution of carboxymethylcellulose according to claim 3., wherein the carboxymethylcellulose which is dispersed in step a. has a degree of substitution comprised between 0.6 and 0.8.
5. Process for the preparation of an aqueous solution of carboxymethylcellulose according to claim 4., wherein the carboxymethylcellulose which is dispersed in step a. has a Brookfield viscosity at 4 wt% comprised between 20 and 500 mPa*s, at 20°C and 20 rpm.
6. Process for the preparation of an aqueous solution of carboxymethylcellulose according to any of the preceding claims, wherein the cellulase preparation of step b. is preparation of cellulase containing natural cellulase complexes

having endoglucanase activity (EG-I, EG-II, EGIII), exoglucanase activity (CBH-I and CBH-II) and β -glucosidase activity.

7. Process for the preparation of an aqueous solution of carboxymethylcellulose according to any of the claims from 1. to 5., wherein the cellulase preparation of step b. is selected among a preparation of cellulase without CBH-I but EG-I and EG-II enriched, a preparation of cellulase having a single EG-III activity expressed by a cloned gene, and mixture thereof.
8. Process for the preparation of an aqueous solution of carboxymethylcellulose according to any of the preceding claims, wherein the mixture of water and alcohol contains from 40 to 50 wt%, of alcohol.
9. Aqueous solutions containing from 25 to 40 wt% of carboxymethylcellulose, obtained by enzymatic depolymerisation in hydro-alcoholic heterogeneous phase from medium viscosity carboxymethylcellulose, and having Brookfield viscosity from 2000 to 5000 mPa*s, and whose Brookfield viscosity, at 20°C and 20 rpm, expressed in mPa*s, does not vary of more than by 10% when measured after three months at room temperature.